# Robson Valley Caribou Surveys

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**Introduction:**

Mountain caribou are an ecotype of woodland caribou (*Rangifer tarnadus caribou*) that live in the mountains of southeastern B.C. In winter, these caribou live primarily in high elevation ESSF forests where they feed on arboreal lichens. Mountain caribou populations have declined or disappeared from many of their historic ranges in B.C. over the past century. Consequently, mountain caribou are a Red-listed species in B.C., and all woodland caribou in southern B.C. are nationally listed as Threatened.

In an effort to protect and maintain the remaining mountain caribou in the Robson Valley, areas of good habitat (Caribou High) have been mapped and are not available for timber harvesting. Areas of medium habitat (Caribou Medium) are specially managed using partial cutting and extended rotations to maintain their value as caribou habitat. There is also increasing concern about the impacts of snowmobiling and helicopter skiing disturbance on caribou, and the potential need for some special zoning and management on winter ranges.

Prior to the start of this project in March 2000, there had not been a complete population survey of caribou in the Robson Valley so it was unclear how many caribou lived there. The habitat management zones were based on historic observations, habitat characteristics, and a limited amount of telemetry data. It was not clear if those areas were currently being used by caribou in winter. Additional information on winter distribution was required to more clearly define important winter habitat areas.

The purpose of this project is to conduct winter surveys of mountain caribou distribution in the Robson Valley to determine how many caribou there are, and to evaluate the current placement of caribou habitat management areas.

In late winter, mountain caribou are found almost exclusively in the subalpine parkland that occurs at the boundary between the ESSF zone and the alpine. Caribou can be censused in late March by flying this zone in a helicopter searching for caribou and tracks. Surveys should be conducted on clear, sunny days soon after new snow has fallen. Studies with known numbers of marked caribou in the survey area have demonstrated that about 83% of caribou are seen during these surveys (Seip 1990, Young and Roorda 1999).

**Methods:**

All areas that have been mapped as Caribou High and Caribou Medium habitat were surveyed, along with the watersheds adjacent to these areas (Figure 1). The Walker Creek and Bastille Creek areas in Prince George District were also surveyed because they are adjacent to Caribou High habitat in the northeast portion of Robson District.

The west side of Kinbasket Reservoir, Swift Creek, Camp Creek, Canoe Creek, upper Rausch and upper Castle Creek were surveyed on March 14; Dore Creek was surveyed on March 20; West Twin, the Goat River system, and the area between the trench and Cushing Creek were surveyed on March 22; and the Morkill and Walker Creek area was surveyed on March 26.

Within each of these watersheds, the treeline zone was flown in a helicopter to locate tracks. Once tracks were located, they were followed until the caribou were located. Weather conditions for all surveys were excellent to good. The total amount of survey time was about 20 hours. The flight route was recorded on a 1:250,000 scale map, and caribou locations were recorded using a Global Positioning System. Caribou were classified as adults or calves.

Radio-telemetry data from caribou which winter in Alberta, but periodically use the upper Morkill/Forgetmenot area, were obtained from the Alberta Wildlife Branch.

**Results:**

A total of 24 caribou were located in the Robson Valley District, and an additional 26 caribou were seen in the Walker Creek area northeast of the District boundary (Table 1, Figure 2). In all cases where caribou tracks were seen, the caribou were located and counted. Applying an 83% correction factor for caribou that may have been missed (Seip 1990, Young and Roorda 1999) yields a population estimate of 29 caribou in the Robson District and 31 caribou in the adjacent Walker Creek area. The detection rate in the Robson District was about 1.4 caribou/hour of flying time whereas the detection rate in the Walker Creek area was about 9 caribou/hour of flying time.

For both areas combined, there were 7 calves and 43 adults observed for a ratio of 16 calves/100 adults, or 14% calves in the population. One caribou in Holy Cross Creek had a radio-collar. No caribou have been radio-collared in this area, and the animal probably came from the Slim Creek or Bearpaw Ridge area to the northwest where caribou have been collared in the past (Glen Watts, pers. comm.).

**Discussion:**

The number of caribou counted in the Robson Valley this year was identical to the number counted in March 2000. However, it is unlikely that these were all the same caribou. All of the caribou counted this year were in the upper reaches of the Goat River

watershed whereas in March 2000, 20 of the 24 caribou were in the southern portion of the District (Figure 2).

It appears that the Robson Valley is not the core area of a major mountain caribou population, but rather provides peripheral habitat that is used in some winters by caribou herds that are centered outside the District Boundary. The caribou seen in Foster Creek, Camp Creek and Canoe Creek in March 2000 were probably caribou that also use the North Thompson area. Although no caribou were seen in these areas this year, this probably represents a change in distribution rather than a population decline. All of the caribou seen in March 2000 were within a few kilometers of the District boundary so a small change in winter distribution could have placed them outside of the census area. One of the helicopter pilots reported 4 caribou just beyond the District boundary in Allen Creek in early March 2001, just over the height of land from Camp Creek where caribou were seen last year. Later in March 2001, 12 caribou were on the Camp Creek side (Bruce McLellan, pers. comm.).

Although only 4 caribou were seen in the upper Goat watershed in March 2000, this year there were 24 caribou in the area. These caribou are part of the North Cariboo Mountains population which contains over 400 animals and is centered to the north of the District. This increased number of caribou within the District also represents a year to year change in winter distribution,

No caribou have been seen in the Mount Rider/East Twin area over the past two years although it has been mapped as caribou habitat. However, this area has had caribou present within the past 5 years (Glen Watts, pers. comm.) and is adjacent to the Walker Creek area where 26 caribou were seen this year. Consequently, a change in caribou distribution as observed in the other areas could result in this area being used by those animals again in the future.

The upper Morkill and Forgetmenot areas represent a large area of mapped caribou habitat where no caribou have been seen over the past 2 winters. Also, there is little or no previous evidence that caribou used this area in winter. Rather, this area provides summer habitat for caribou that migrate out of the area to winter ranges in Alberta. The telemetry data which we have obtained from the Alberta Wildlife Branch indicates that although some caribou use this area in summer, there is no evidence of collared animals remaining through the winter. Surveys this year also found no caribou in the Bastille area to the north where the habitat becomes extremely rugged. Consequently, this area does not appear to be important for winter habitat.

Similarly, no caribou have been seen over the past 2 years in the upper Rausch River where caribou habitat has been mapped. This area appears to be much too steep and rugged for caribou winter range. However, this area does provide summer habitat for some caribou which migrate to winter ranges located on much gentler terrain within Wells Gray Park (Seip 1990).

All of the caribou seen this year were in areas mapped as Caribou High. Last year, half of the caribou were in Caribou High Zones, but the animals in the Canoe/Camp creek area were not in mapped habitat. Results to date would suggest that the mapped habitat in the Foster Creek area and upper Goat are used by caribou, and that the Mt. Rider/East Twin area has a strong potential to be used in future years. The areas in the Morkill/Forgetmenot and the upper Rausch may only be summer range and not merit winter range designation. However, the area around Camp Creek does provide caribou winter range and should be considered for Caribou High designation.

The winter density of caribou within the Robson Valley (2.3 caribou/1000 $km^2$) is very low compared to core areas of mountain caribou distribution in B.C. (40-50 caribou/1000 $km^2$). Nonetheless, over a period of several years, the District may provide winter habitat for up to 100 caribou. The calf recruitment rate of 14% calves in the population indicates that calf survival is just barely adequate to maintain the population (Seip and Cichowski 1996). Thus the status of mountain caribou in the Robson Valley is very precarious, and they need to be very carefully managed if they are going to continue to contribute to the overall status of this Threatened species in British Columbia.

**References:**

Seip, D.R. 1990. Ecology of woodland caribou in Wells Gray Provincial Park. Wildlife Bulletin # B-68. B.C. Wildlife Branch. Victoria.

Seip, D.R. and D.B. Cichowski. 1996. Population ecology of caribou in British Columbia. Rangifer: Special Issue #9, 73-80.

Young, J.A. and L.M.Roorda. 1999. Summary of the 1993-1999 mountain caribou census within the Quesnel Highland and Cariboo Mountains, Cariboo Region. unpublished report.

Table 1. Caribou seen in and adjacent to Robson Valley Forest District during surveys in March, 2001. Letters refer to location of map.

| | Location | Co-ordinates | Adults | Calves | Total |
|---|---|---|---|---|---|
| A. | North Star | 53° 16.19' N<br>120° 47.52' W | 1 | 1 | 2 |
| B. | Goat | 53° 22.64' N<br>120° 56.71' W | 5 | 2 | 7 |
| C. | Goat | 53° 17.83' N<br>120° 57.33' W | 5 | 0 | 5 |
| D. | McLeod | 53° 27.62' N<br>121° 01.23' W | 9 | 1 | 10 |
| **Total in Robson Valley District:** | | | **20** | **4** | **24** |
| E. | POB Creek | 53° 43.52' N<br>120° 42.39' W | 7 | 2 | 9 |
| F. | Walker Creek | 53° 50.43' N<br>120° 36.79' W | 7 | 0 | 7 |
| G. | Holy Cross | 53° 48.80' N<br>120° 45. 44' W | 6 | 1 | 7 |
| H. | Holy Cross | 53° 47.42' N<br>120° 49.84' W | 3 | 0 | 3 |
| **Total in Walker Creek Area:** | | | **23** | **3** | **26** |

Figure 1. Flight route of caribou survey, March 2001.

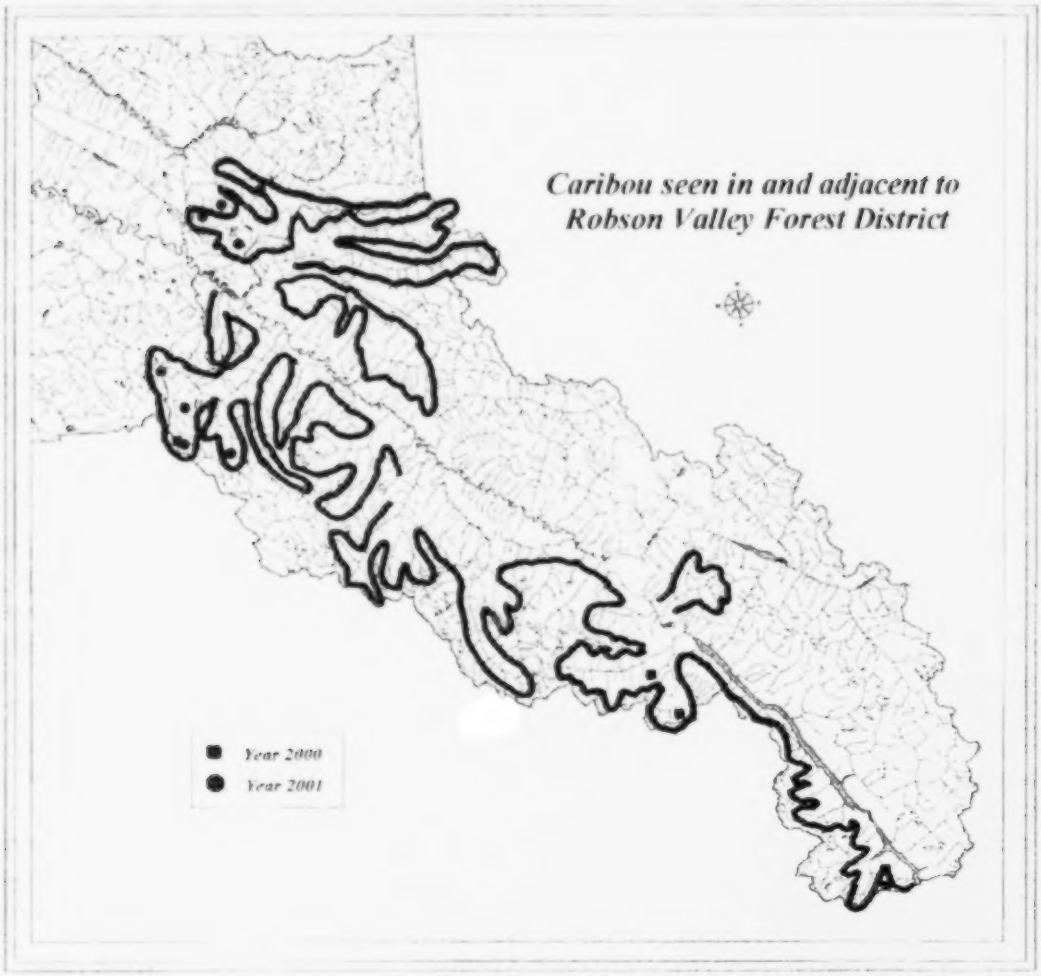

Figure 2. Caribou locations in March 2000 and March 2001. Letters on 2001 locations refer to groups described in Table 1.